Highlights from the

1ST WORLD CONGRESS ON SURGICAL TRAINING

SurgiCON

Gothenburg, Sweden, September 8-9, 2011

Surgicon is the first interdisciplinary meeting about "How to teach and learn surgical skills?" for experienced surgeons (as teachers), young surgeons (in training), program directors and industrial partners active in surgical training and simulation. The goal with the meeting is to present the latest knowledge in how to enter the surgical profession in a structured way, optimizing the patient's and surgeon's safety.

The initiative and congress organization was made by Dr. Margareta Berg, MD PhD, Sahlgrenska Science Park, in collaboration with 11 Organisations and additional 12 sponsors. See also the congress program, available at www.surgicon.org as pdf.

Professional Moderator, Karin Klingenstierna

200 delegates from 29 countries and 6 continents attended the Meeting. Speakers from all over the world attended as well as representatives from Integrum, Zimmer and DePuy. Well prepared and talent speakers, lectured at one general session, and together with the professional moderator, and an active audience, a interesting and successful congress was held.

An abstract book was handed out to the delegates and copies are available (could be ordered at the Surgicon website).

Official Inauguration speech by Lena Furmark –Löfgren, Political Advisor at the Swedish Ministry of Health and social Affairs:
In the relatively small country as Sweden, there are 100 000 patients suffering from injuries caused in health care every year, resulting in many thousands of extra care days and an additional bill of 6 million Euro per year. Of these, 3000 deaths occur per year. In 2009 a surgeons check list was introduced in Sweden, compared to airplane pilot's check lists before start. However, this checklist will not influence surgical skills. In January 1, 2011, a new Patient's Safety Act was introduced to increase the patient's role, to eliminate the individual "shame and blame culture" and to introduce modern thinking of responsibility on an organizational level.

Opening and Honorary guest lecture by Dr. Esch (San Diego, USA). He presented in a very nice way, with a lot of photos and video clips, his experience of being a teaching surgeon for 28 years. Metaphors from the golf player's world was the theme through the lecture. He had documented the students' skill and learning using objective, structured assessment and measuring tools. Taken together with his personal experience and a lot of scientific documentation he conclude that: students like the one-to-one contact (direct feedback) in the operating room (guidance with practical directions and strategic thinking). Students do not like to be alone. Continuity and affirmation through out the study period. Students are not comfortable to teach other students. Hence, effective teaching should be structured to be as

individualized as possible. He ended by an open question to the audience: are we as surgical teachers, impressed with our teaching skills?

Sessions followed by discussion and a "mentometer" voting system for questions and answers.

Session 1: Methods for surgical training
Chair/Keynote speaker: Prof. Anthony G Gallagher, University College Cork, Ireland

Pr. Tony Gallagher argued based on the attributes a surgeon must have (observant visio-spatial, perceptional ability, psychomotor ability and secondary attributes as bright, hard working, diligent, comfortable making decisions) and the tools available for proper education (simulators, lecturers) that anyone can not be a surgeon!

Pr. John Windsor highlighted the interesting question if procedural skills could be accomplished by cognitive simulation (in other words if virtual reality is efficient for educational purposes) and the answer is yes.

Dr Jeffrey Levy spoke about the multiple intelligences (theory by Howard Gardner) benefit from simulators in the education of surgeons and the possible implementation of simulations in the hospital and University organisations.

Pr Bengt R Johansson and Dr Martin Ålund spoke each of them, on the importance of dissection for the comprehensive experience of the tissue structures, but also highlighted the curriculum of medical education and the lack of specimens. Discussion: a lot of time at the discussion was spent on the need or not of simulators and the cost benefit evaluations. The views diverge a lot and the structure of surgical training vary a lot between countries. The excellent and large generation of surgeons will soon retire. They did nor gain their expertise through simulators and how to transfer the expertise to the coming generation was discussed.

Summary by Pr Gallagher:

1. The independent practice of modern image guided surgery makes unique human-factor demands on surgeons.
2. It should not be assumed that bright, motivated and enthusiastic trainees have the aptitudes and capabilities required for the learning and practice of surgery; rather, they should be explicitly assessed
3. Cognitive simulations hold great promise for distributed learning
4. Cadaveric dissection is a high-value but diminishing resource for anatomical education and training which has been fundamental to the training of doctors and surgeons for centuries
5. Collaboration between preclinical institutions of anatomy and teaching hospitals could optimize the use of existing training resources.
6. Medicine and surgery must better understand how this invaluable resource nay be better harnessed for optimal learning
7. The Alliance for Surgical Simulation in Education and Training (ASSET) should consider how this learning resource and other types of simulations may be better

utilised and integrated across the surgical curriculum for efficient and effective learning.

Voting from the audience:

Is cadaver lab training necessary during surgical residence?
Yes 75%, No 25%

Do you have access to surgical simulator?
Yes 58%, No 42%

Is the access to cadaver training satisfactory?
Yes, 29%, No 71%

Is the access to surgical simulators satisfactory?
Yes 31%, No 69%

Session 2: Structure for surgical training
Chair/Keynote speaker: Dr Richard L Angelo, President of the AANA, Washington, USA

Dr Richard L Angelo discussed "how do we enable trainees learn more effectively" and not "how do we teach better". He went through the different ways of learning and draw a parallel to training flying airplanes. He asked the audience would you like to fly with a pilot student, knowing he never have trained in a simulator?

Pr Carlos A Pellegrini talked about the need to reform the structure of surgical training (collaboration between the public, educators/institutions, students, learners and hospital) to suit the need of modern society.

Pr Gerald O'Sullivan discussed the often flawed scientific articles and the importance of full time research experience during the surgical training. His topic was critical thinking.

Dr Richard Hanney spoke very engaging about an ongoing international project to recruit and engage academic surgeons.

Discussion: The hidden curriculum was mentioned i.e. that "students follow and act as the people they admire, not as they say". The young students have a "synthetic experience" and the reason for being a student differs a lot (social engagement or personal interest). Research training is mandatory in many countries but not in all.

Voting from the audience:

Should surgeons have performed at least one study on order to gain critical thinking?
Yes 74%, No 26%

Shall medical students perform and pass a psychological test?
Yes 53%, No 47%

Is it possible to obtain interdisciplinary agreements for the curriculum of surgeons?
Yes 69%, No 31%

3. The Surgical Resident's Dream Scenario

Dr. Jörg Ansorg presented the residents dream on surgical training where accountability, sustainability predictable training time, high surgery volume, motivated trainers and good work-life balance were mentioned. Also that assessment of the students progresses is important as well as a mentoring system.

Dr. Torben Nordahl presented a study showing on the importance of good teamwork in order to reduce the number of mistakes and complications. Hence the non technical attributes such as situation awareness, decision making, communication, stress and fatigue and leadership, of the surgeon has a pivotal role. Increase the students self awareness –"what I am capable of and what to not" and skip the "culture of blame".

Dr. Goldie Khera presented the negative effect of the European Working Time Directive (EWTD) on the quality of the surgeons situation. It will take even longer time to become a surgeon (today up to 12 year after basic training), increased lack of patient continuity, multiple hand over's and an increased number of sick leave among younger surgeons have been the result since the introduction of EWTD.

Dr Jessica Montori presented the dream of the residents as being treated as comprehensive as when parents raise their child. And concludes that what's written on the paper is not the same as when it comes to people.

Dr. Ninos Oussi cited Confucius "I hear and I forget, I see and I remember, I do and I understand" and argued that education should be competence based not time based.

Discussion: The introduction of EWTD have lead to lower team spirit and the surgeons are becoming disillusioned. It is no longer that attractive to be a surgeon and student even terminate their program when they realise they will not reach their goals. The issue should be "what do you do during the time at the hospital?" and not how many hours you have been working.

4. Driver's License Systems for Surgeons

Dr. Spencer Beasley presented the Royal Australian Colleague of Surgeons (RACS) training structure composed of 9 different competencies evaluated by assessment and fellowship examinations.

Dr Dana Andersen mentioned little about the truisms in surgery and focused on how to assess knowledge based skills (i.e. judgement). What is expert judgement? "a good surgeon knows when to speed up and when to slow down". There are experts and experienced non-experts out there and there are web based simulation tools available giving immediate feed back.

Dr Sanjiv Kanagaraja presented the history of guided maxillofacial implant surgery and was clear to distinguish it from surgical navigation (which is more a tracking device giving real-time feed back visualization on what you are doing). He presented the CAD and CAM and its role in planning and performing large reconstructive cases (like TMJ replacement).

LtCol Robert Persson showed on how important simulators are as training tool in military training and how different simulators are used in different stages, for different purposes and so on.

Discussion: It is clear that the surgeons are way behind the industry in development and training of "expert judgement". Time for reflection or debriefing is crucial but does it happen often after leaving the OR? The main reason for letting students terminate the program is never lack of technical skill but performance, behavioural or for ethical reasons.

Voting from the audience:

Should a "Drivers Licence" create added value for the surgeon?
Yes 73%, No 27%

Should a "Drivers Licence" create added value for the patient's safety?
Yes 84%, No 16%

Should a "Drivers Licence" create added value for hospital directions?
Yes 60%, No 40%

Should a "Drivers Licence" facilitate recruitment of new surgeons?
Yes 47%, No 53%

How many have experience of students that have been advised to leave the surgical program?
Yes 78%, No 22%

Session 5: Teaching tomorrow's teachers
Chair/Keynote speaker: Pr Richard Reznick, Dean, Faculty of Medicine, Queen's University, Toronto, Canada

Pr Richard Reznick held a very interesting and charismatic lecture on the provocative theme, competence based education. He described a framework (and an ongoing study with students being the target) with different competencies that must be achieved measured by end-point training. The aim is to find a core competence curriculum, not a time based one. Attempts are made in the direction towards EWTD to reduce psychological stress (its a 80h work week in USA, 78h in Canada, and 50h in Germany).

Dr Kai Olms held a very good lecture on "the power of power point". It is recognised that the students prefer to learn from hands-on in 90% and from lectures in less than 10%, but reality is the opposite. Further, giving out hand-out before the lecture is the kiss of death. It is impossible to listen and read at the same time and the slides are not the speakers script (never read the slides). "Prime" the brain to obtain an interest using interesting pictures or a correct title of the topic. Do never show a bad slide or a slide with bad quality. Have the light on,

never more than 5 bullets, 5 words and so on. Assertion Evidence Design (think of the allusions: theoretical test for plate stability = Finite element test show the stress area).

Pr. Sean Tierney held a very good lecture in informatics and e-learning. The learning was before service based, problem based and nowadays system based. Don't forget the patient and the quality of patient care. There are several online interactive learning modules with e-logbooks for the students. Until now the universities prefer closed systems and do not promote social media as twitter, Face book and Linked in. However internet gives the possibility to educate and share experiences with doctors all over the globe, particularly in Africa and other non- industrialized countries.

Dr Thomas Skoglund presented in an interesting way www.neurosurgic.com which is a non-profit web-meeting place for neurosurgeons holding different modules for different activities such as wall, blog, images, news Conferences, Journal scan of the most important recent articles, Amazon, Surgical journals (homepages) Self-assessments Videos, cases and on. Google analytic statistics report a long stay per visit and 3,6 pages per visit indicating it is used for its purpose.

Pr MariAnne Karlsson discussed the "human factors in surgery". She was an extremely good speaker and had a very interesting theme. We live in the technification era and technology can be a "filter" if not rhetorically introduced in the right way and used in the right way. To succeed, use center developed processes and a user involvement (a trained user shall introduce the learning).

Discussion: All young people are not that interested in new technology, and it is the presenter that is the method, not the power point.

Summary by Pr Reznick:

1. A coalescence of events has lead to the situation that we are at a precipice with regards to surgical education, a precipice that mandates change.

2. Change will need to be fundamental in order to deal with the magnitude of the forces that threaten surgical training, as we knew it.

3. The most important area to focus transformative change is the nature of the surgical training curriculum.

4. A competency-based curriculum is necessary, but in of itself, the competency framework is insufficient as a concept for change.

5. An experimental program has been initiated to radically alter the nature of surgical training. It rests on six fundamental principles: a) financial restructuring of training, b) modular training, c) accelerated procedural skill acquisition, d) diminishing wasted time, daily assessment, e) promoting an inter-professional culture, and f) success in training linked to competency benchmarks as opposed to time.

6. To create revolutionary change, we should consider dismantling the continental divide between pre-medical studies, medical school, residency training, and fellowship training.

Voting from the audience:

I have been supported in my teaching role.
Yes 56%, No 44%

6. Evaluation of Surgical Skills

Dr. Rajesh Aggarwal and Pr. Ann Van Heest each presented objective assessment of surgical performance. Assessment throughout the whole chain of steps in the care of the patient to the assessment of the single surgeons quality. Simulators are tools that can be used in order to evaluate training, which would not be ethical to perform on patients.

Pr Li Fellander-Tsai reported on training of cognitive skill and that there are differences between males and females in regards to different attributes and skills a surgeon have, but it is unknown if this have an effect on the result.

Discussion: a lot of cultural differences occur, however training must be fun and one need to find the factors that make the training attractive.

Voting from the audience:

Do you work actively with evaluation of surgical practice?
Yes 57%, No 43%

Should a one-page evaluation increase the feeling of security for the course?
Yes 90%, No 10%

7. The Role of the Industry in Surgical Training

Dr Dirk Ghadamgahi, DePuy discussed if there is a value of training supported by the industry. DePuy aim to raise the standard of surgical practice in order to help the patients better. In mean 75% of the learning is achieved on a course, and a surgeon attend in mean 4 courses per year and the major aim is to train on cadavers. If participants were willing to pay part of the course 88% answered yes, however, 13 % could not see any value in attend a sponsored course and 60% answered that they were unable to go on any course due to lack of time. 70% of the asked uses apps and smart phones in their daily work. DePuy conclude that it is the reputation of the accredited course in terms of reputation of invited lecturer/faculty and the availability to cadaver, that makes people go and that the industrial sponsoring have minor importance.

Dr Heidi Jauch, Zimmer spoke very clearly about the compliance from a legal perspective, i.e. the adherence to legal and regulatory provisions, the observance of rules and ethical business. T&E is essential for the safe and effective use of their products. Zimmer is involved in Industry courses, third party events, Congresses, Research and Development and Clinical studies. Always separate the educational and commercial activities. This applies for the sales staff and on the personel at the organizational levels. Have a transparency (declare what

refunds are paid) and apply equivalence (fair market value) and have documentation so support the above bullets.

Dr Rickard Brånemark, Integrum held a good lecture on the development of his company and presented some strategic decisions to obtain and maintain high quality of the products and ensure good surgical skill. Certification and recertification is an interim solution. In the long-term registers such as the hip register will complement the evaluation of medical device products.

Dr Margareta Berg, organizer held the closing speak on compliance between Universities, Hospitals and the Industry. She presented the Swedish Procurement that surgeons are not able to choose the product them selves, (it is already decided in the organisation). There is no willingness to support continued surgical training and that the different care organisations need to collaborate to counteract us-them scenario, which only results in bad patient care. It was decided at the discussion to ask Senior Advisory Board to suggest actions and select board members to drive these questions.

Voting from the audience:

Do we need another committee group to solve questions related to surgeons education?
Yes 74%, No 26%

In case wee need it, should we elect this here and now?
Yes 46%, No 54%

Can Senior Advisory Board and Present Industry representatives select the board members?
Yes 79%, No 21%

Should we do this congress again?
Yes 96% No 4%
